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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,678

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Peter Kelly

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EXAMINER

AFTERGUT, JEFF H

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

12/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,678	Applicant(s) KELLY ET AL.	
	Examiner Jeff H. Aftergut	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6-28-06</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 11-15, 17, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT WO 00/20185.

Regarding claims 17, 18, and 20, PCT WO '185 suggested that it was known at the time the invention was made to manufacture a an article which included a surface and a lithophane type work visible through the surface having a thickness adjusted as a function of opacity of material from which the surface is made and a color of the material, see page 4, lines 10-25 for instance. The reference taught that the lithophane work was sculpted within the surface as the surface was machined as described. PCT '185 suggested the article was selected from the group consisting of eatable items; see page 5, lines 13-24, page 6, lines 30-32.

Regarding claims 1-8 and 11, the reference to PCT '185 suggested that one skilled in the art would have selected an image and converted the selected 2-D image into a 3-D representation and extrapolated a thickness and depth of the 3-D representation based on opacity and color of material into which the lithophane work is to be produced, see page 1, line 32-page 2, line 33. the reference to PCT '185 suggested that the 2-D image was a photograph and the reference taught that one skilled in the art would have scanned the same to read a binary representation of the

Art Unit: 1791

selected 2-D image, see page 10, lines 1-10. The reference suggested that one skilled in the art would have the processor analyzed the data corresponding to the image to determine the relative intensity (i.e. the relative darkness or lightness at different points or pixels of the image, see page 10, lines 12-15. the reference suggested that the intensity values may be stored in memory and may be that these values can be processed to normalize the same or vary these as a function of the materials which are going to be milled to produce the lithophane. Additionally, it was possible to use the processor to enlarge or reduce the image or to edit the image for example by deleting parts of the image or combining images, see page 2, lines 19-33. The reference thus taught that software (CAD or computer aided milling software) was used to alter the values as needed to provide the 3-D image to be reproduced, see page 10, lines 12-17. The reference additionally clearly suggested that one skilled in the art would have adjusted the shape and contrast of the selected 2-D image to receive the desired shape and to achieve the desired level of contrast between dark and light spots on a grayscale of the 2-D image (see claim 5). The reference to PCT '185 suggested that the substrate was milled to form the finished assembly from materials which included plastics, see claim 6. Regarding claim 7, note that the reference suggested that stored data would have been useful for generation of the 3-D image which was to be reproduced, see column 2, lines 19-33, page 10, lines 1-10. regarding claim 8, the reference suggested that those skilled in the art would have adjusted the image is needed in terms of size (enlarge or reduce) for example, see page 2, lines 31-33. regarding claim 11, note that

Art Unit: 1791

the reference suggested that one create a transportable file which included the information of the 2-D image for creation of the 3-D therefrom, see page 10, lines 1-10.

Regarding claims 12-15, as discussed above regarding claims 1-8 and 11, the reference to PCT '185 suggested the process wherein a computer processor was used to execute software which was designed to pick a 2-D image and convert the 2-D image into a 3-D image with the analysis of the color or opacity data from the image to identify a thickness of the material as a value of the same in the finished 3-D image and to then select a specific thickness for the lithophane as a function of the material (color and opacity of the material) on which the lithophane is to be manufactured. Such clearly included the use of grayscale in the processing operation of the software. additionally, the reference suggested that those skilled in the art would have generated the lithophane via a milling and/or machining operation (sculpting) as defined in claim 14. with respect to claim 15, note that the software clearly included changing images as well as altering the sizes of the images to be reproduced.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT WO 00/20185 in view of EP 918268 and UK 2376915.

Art Unit: 1791

PCT '185 is discussed in detail above. The reference taught the overall process, apparatus and method for manufacturing the lithophane. The reference did not expressly state that the color was used in the collection of data for conversion of the 2-D image into a 3-D image with appropriate thickness information for the image. The reference to PCT '185 additionally only suggested that one skilled in the art would have provided a machining or milling operation for manufacture of the lithophane and not the use of printing to form the 3-D lithophane.

EP '268 additionally suggested that those skilled in the art would have scanned in information for the 2-D image which included brightness, color, contours or contrast differences and used this information to determine the proper thicknesses of the various portions of the image in the 3-D image, see paragraphs [0007], [0009] and [0011]. Note that the processing in accordance with EP '268 is similar to that of PCT '185. The combination failed to teach that the 3-D lithophane was produced using a printing operation.

UK '915 suggested a process and system as well as the lithophane produced with the same. The reference to UK '915 emphasized that those skilled in the art would have manufactured the same by either milling and/or machining an transparent substrate or printed using a 3-D printing operation to form the lithophane. As it would have been an art recognized equivalent for forming the lithophane, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a printing operation instead of machining to form the lithophane as suggested by UK '915 wherein the information from the 2-D image which was used to generate the 3-D

Art Unit: 1791

lithophane included not only lightness but also color, contrast as well as contour as suggested by EP '268 in the system, process and lithophane manufactured in accordance with the techniques of PCT '185.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Jeff H. Aftergut/ whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:30-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff H. Aftergut/
Primary Examiner
Art Unit 1791

JHA

Application/Control Number: 10/584,678

Page 7

Art Unit: 1791

December 1, 2009